

NEW YORK STATE COLLEGE OF HOME ECONOMICS

Pies: • pastry • fillings meringue

GERTRUDE ARMBRUSTER AND MARJORIE BURNS



CORNELL EXTENSION BULLETIN 1027

Pies: pastry

BEFORE YOU BEGIN

The ingredients you choose will make a difference in your pastry:

- *All-purpose flour* is the most common choice. Pastry made with all-purpose flour tends to be crisp and flaky as well as tender. Be sure to sift the flour before measuring, so as to have an accurate measurement.
- *Any solid shortening* is satisfactory, but you will need less lard than other solid shortenings. Lard is heavier than the hydrogenated or common cake-baking shortenings. One cupful of lard weighs approximately 8 ounces while one cupful of hydrogenated shortening weighs only 6 $\frac{3}{4}$ ounces. Lard gives pastry a characteristic flavor.

Whatever the shortening you choose, have it soft enough to measure easily. If it is so soft that it might blend with the flour during the cutting-in process, chill it in the refrigerator until it is firm.

If you choose a cooking oil, select a method which has been developed for its use. For flavor, butter and margarine may be used as part of the fat. Generally they are not used as the sole shortening.

- *Liquid* for pastry is usually water, although you can use milk or fruit juice. Milk adds flavor and gives a golden brown color.

Tools and equipment help

- *Standard measuring equipment* and accurate measurements help insure the same results every time. For the flour and shortening, use cups designed for measuring dry ingredients; for the water, use standard measuring spoons or cups designed for measuring liquids. The water displacement method of measuring shortening is not well suited to pastry making because some of the water is apt to cling to the shortening.
- *A pastry blender* is convenient for cutting the shortening into the flour. Two knives, used with a cutting motion, work equally well.
- *A canvas pastry cloth* and a stockinet to cover the rolling pin help make the dough easy to roll without sticking. Extra flour rolled into the dough can make the crust tough.

illings, meringue

- *The pie pan* you select should be of standard width and depth. Width is measured across the top inside; depth is measured inside and perpendicular to the bottom. These are some common standard sizes of pie pans and the amount of filling each will hold:

Size	Approximate capacity
8 inches x 1 $\frac{1}{4}$ inches	3 $\frac{1}{2}$ cups
9 inches x 1 $\frac{1}{4}$ inches	4 $\frac{3}{4}$ cups
10 inches x 1 $\frac{1}{4}$ inches	5 $\frac{3}{4}$ cups

The material of which the pie pan is made will affect the way the crust browns.

1. Medium-weight pans of dull metal, oven glass, enamel, or tin pans which have darkened will absorb heat and give a browner crust.
2. Pans made of shiny metal will reflect heat and give a crust of a lighter color.
3. Disposable foil and paper pans will tend to give a light crust because neither type will absorb heat.

IN THIS BULLETIN

Methods of mixing pastry	4
Pastry and pastry mix	5
Conventional method of mixing pastry	6
Paste method of mixing pastry	7
One-crust pie	8
Tart shells	9
Cream pies	10
Lemon cream pie	10
Meringue for cream pies	11
Custard-type pies	13
Custard pie	13
Two-crust pie	14
Two-crust fruit pies	14
Frozen cherry pie	15
To make a lattice top	16

METHODS OF MIXING PASTRY

There are many accepted ways of making pastry. In this bulletin we will describe two of the more common ways: the conventional and the paste method—either will give you a tender, flaky pastry. Some people prefer the paste method over the conventional, because with the paste method it is easier to distribute the water evenly through the flour and fat.

The measurements of ingredients are the same regardless of the method of mixing you choose.

Pastry making pointers

Choose the method of mixing pastry which you like best. Regardless of the method you choose, remember:

- *For flaky pastry, leave some of the fat in pieces the size of peas* instead of mixing all of it thoroughly with the flour. These pieces of fat, together with the flour, form layers. During baking, the water in the pastry changes to steam, separates these layers, and thus produces flakiness.
- *Use only the amount of water specified in the recipe*, or just enough to make a dough which is neither sticky nor dry. Too much liquid will make a sticky dough. In rolling, a sticky dough will absorb additional flour and make the pastry less tender.
- *Air incorporated* as you add the liquid to the flour will help make the pastry light. In stirring, therefore, use strokes that will add as much air as possible to the mixture.
- *Handle the dough lightly*. Too much handling will develop the gluten and result in tough pastry. When the dough begins to cling together, pick it up and press it together between cupped palms, turning the dough four times. *Do not knead the dough*.
- *Use flour sparingly when rolling the dough*. Extra flour rolled into the pastry can cause a tough crust.
- *Chilling the dough* in the refrigerator for 5 to 10 minutes before rolling it may result in a dough that is easier to handle and not as apt to stick.

PASTRY

Yield: ingredients are given for **Temperature and baking time:**
 1 one-crust shell 450°F. for 10 minutes or until brown
 1 two-crust pie see individual recipes
Size of pan: 8- or 9-inch

Ingredients	One-Crust	Two-Crust
Flour, sifted	1 cup	2 cups
Salt	$\frac{1}{2}$ teaspoon	1 teaspoon
Shortening	$\frac{1}{4}$ cup lard <i>or</i> $\frac{1}{2}$ cup hydrogenated ¹ shortening	$\frac{1}{2}$ cup lard <i>or</i> $\frac{3}{4}$ cup hydrogenated shortening
Water	2 tablespoons	$\frac{1}{4}$ cup

¹"Hydrogenated" fat means the common cake-baking shortenings.

PASTRY MIX

Yield: 6 one-crust shells for 8- or 9-inch pies

6 cups sifted flour 1½ cups lard² *or*
 1 tablespoon salt 2 cups hydrogenated shortening

1. Use the conventional method of mixing pastry, following steps 1 and 2, page 6.
2. Spoon the mix into an opaque container which has a tight cover. Keeping out light and storing in an air-tight container at a cool temperature are precautions against rancidity of the fat. The storage time for the mix is difficult to give, but under good storage conditions it should keep for as long as 2 to 3 months.

To use the pastry mix

Stir the mix before measuring, then:

For a one-crust pie—Measure 1½ cups mix and 2 tablespoons water. Mix according to the conventional method, steps 3, 4, 5, and 6, page 6.

For a two-crust pie—Measure 2½ cups mix and ¼ cup water. Mix according to the conventional method, steps 3, 4, 5, and 6, page 6.

²Choose a lard which does not require refrigeration.

**Three steps in the
conventional method
of mixing pastry**



CONVENTIONAL METHOD OF MIXING PASTRY

1. Sift the flour, measure, add the salt, and sift again.
2. Cut in the shortening, using a pastry blender or two knives. After each time you cut through the mixture to blend in the shortening, lift it up; this will keep the mixture light. Blend in the shortening until the mixture looks like coarse crumbs; leave some of the pieces of shortening about the size of peas.
3. Sprinkle a small amount of the water over some of the mixture and toss it lightly with a fork—until the dampened portion holds together. Run a fork along the bottom of the bowl with a lifting motion. Then add water to another portion until all of the water has been added.
4. Stir the mixture to form a ball of dough. The dough should be neither sticky nor dry.
5. Pick the dough up in your hands and press it together between cupped palms, turning the dough four times. *Do not knead the dough.* Press the dough into a flattened ball. Build the outside edges up higher than the center. Pinch the edges together if the dough cracks.
6. Roll the dough according to the directions on page 8 for a one-crust pie or on page 14 for a two-crust pie.

**Three steps in the
paste method
of mixing pastry**





PASTE METHOD OF MIXING PASTRY

1. Sift the flour, measure, add the salt, and sift again.
2. If you are making a one-crust pie, take out 2 tablespoons of the flour-salt mixture; if you are making a two-crust pie, take out $\frac{1}{4}$ cup. (No matter what size the recipe, reserve an amount of the flour-salt mixture equal to the amount of liquid which you are using.)
3. Add the shortening to the remaining flour and salt. Cut in the shortening with a pastry blender or two knives. After each time you cut through the mixture to blend in the shortening, lift it up; this will keep the mixture light. Blend in the shortening until the mixture looks like coarse crumbs; leave some of the pieces of shortening about the size of peas.
4. Add the water to the flour-salt mixture you have reserved and blend to form a paste.
5. Add the flour paste to the flour-shortening mixture all at once. Mix lightly with a fork until the dough just clings together.
6. Pick the dough up in your hands and press it together between cupped palms, turning the dough four times. *Do not knead the dough.* Press the dough into the shape of a flattened ball. Build the outside edges up higher than the center. Pinch the edges together if the dough cracks.
7. Roll the dough according to the directions on page 8 for a one-crust pie or on page 14 for a two-crust pie.



Preparing a one-crust pie



ONE-CRUST PIE

Temperature: 450°F.

Time: 10 minutes or until brown

1. Make the pastry for a one-crust pie, page 5.
2. *Lightly* flour the board or pastry cloth and the rolling pin. Brush aside any extra flour, leaving only a thin film.
3. Roll lightly, working from the center to the outside, to $\frac{1}{8}$ -inch thickness. Roll the dough 1-inch larger than the inverted pie pan.
4. Fold the pastry in quarters. Lift it carefully into the ungreased pie pan. Unfold and let the weight of the pastry ease it into place without stretching.
5. Trim the pastry, leaving about $\frac{1}{2}$ -inch overhang. Turn the edge under all the way around. Then raise this fold so it stands up.
6. To flute rim, place the tip of the right index finger against the inner edge of the fold; then place the left thumb and index finger on the outside edge and on either side of the right index finger. Pinch and press firmly with the fingers of the left hand. Continue fluting around the rim.
7. For a baked pie shell, use a fork to prick the pastry thoroughly on the bottom and sides to keep bubbles from forming under the crust. (This is not necessary, however, if you are going to bake the filling in the crust, as you would in a custard pie.) Bake in a hot oven, 450°F., for 10 minutes or until brown.
8. Cool before adding the filling.

Fillings for one-crust pies and tarts

Cream fillings

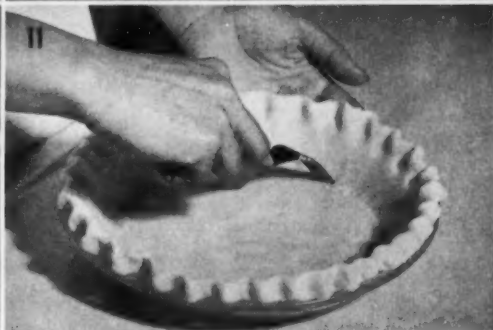
Fillings made with gelatin

Custard fillings

Ice cream

Cooked fruit

Fresh fruit



TART SHELLS

Yield: 8 to 10 tart shells

*Pan: muffin pans with 8 to 10 shallow cups,
2½ inches x 1¼ inches*

Temperature: 450°F.

Time: 10 minutes

Pastry for a two-crust pie

1. Roll the pastry $\frac{1}{8}$ -inch thick.
2. Cut a pattern for the tart shells from waxed paper using the muffin tin as a guide. Allow $\frac{1}{2}$ -inch for the edge. Test the pattern for size by fitting it into the muffin cup. Lay the pattern on the pastry and cut the shells. Fold into quarters.
3. Center the pastry in the muffin cups. Do not stretch. There will be folds. Cut away the excess folds of pastry with shears and brush a little water over the cut edges and seal. Flute the edges.
4. Prick the pastry well with a fork to keep bubbles from forming between the pan and the crust.
5. Bake on the lowest rack in a hot oven, 450°F., for about 10 minutes.
6. Cool the shells and fill with fresh fruit in season, or any desired pie filling.

CREAM PIES

Cream fillings are cooked and poured into a baked pie crust. The filling should be smooth and creamy, yet firm enough to be cut and served without running out of the shell.

For success with cream filling recipes, keep the following points in mind:

- *Cook the filling as rapidly as possible.* Place the pan over direct heat. Keep the heat moderate or high as the recipe indicates. To speed up cooking, heat the milk to boiling before pouring it into the other ingredients.
- *Be sure the mixture returns to a boil* and that you start timing it as soon as it boils again. The mixture gets thinner after it has boiled a minute or two, but it will be thick when cold if you boil it the full 3 minutes.
- *Allow 3½ to 5 hours before cutting the pie.* This will permit the filling to set to the desired consistency.

LEMON CREAM PIE

Yield: filling for one 9-inch pie

Pan: 9-inch pie pan

2 cups milk	3 egg yolks, slightly beaten
$\frac{1}{2}$ cup sifted flour	$\frac{1}{2}$ cup lemon juice
$\frac{3}{4}$ cup sugar	1 teaspoon grated lemon rind
$\frac{1}{2}$ teaspoon salt	1 baked 9-inch pie shell

1. Reserve $\frac{1}{2}$ cup of the milk. Place the remaining milk in a saucepan over high heat and bring it to a boil.
2. Combine the flour, sugar, and salt. Add $\frac{1}{2}$ cup of the cold milk and combine; stir in the egg yolks, then add the remaining $\frac{1}{2}$ cup cold milk and stir until smooth.
3. Add half of the boiling milk slowly to the egg mixture, stirring constantly.
4. Pour the hot mixture into the remainder of the hot milk in the saucepan, return the pan to the heat, and bring the mixture quickly to a boil, stirring constantly. Continue stirring and boil the mixture gently for 3 minutes.
5. Remove from the heat, and stir in the lemon juice and the grated lemon rind. Pour the mixture into a baked 9-inch pie shell and let it stand while making the meringue.
6. Cover the filling with the meringue (see recipe, page 12) and bake as directed.
7. Let the pie cool at room temperature before serving. It takes about 3½ hours for the filling to set.

MERINGUE FOR CREAM PIES

The meringue should be tender, easy to cut, and fluffy. It should have little or no beading on the surface or leakage between it and the filling.

The directions on page 12 make a successful meringue if you follow each step carefully. The reasons for some of the steps are given below:

Ingredients

Egg whites at room temperature will usually beat up to a larger volume than whites taken directly from the refrigerator. The recipe is based on medium-sized egg whites.

Cream of tartar gives a characteristic flavor and color to the meringue; some believe it makes the meringue more stable.

Finely granulated sugar is a wise choice because it dissolves easily. Two tablespoons of sugar for each egg white will make a fine-textured, tender, but not sticky meringue. *Too much* sugar makes the meringue gummy; *too little* makes the meringue less tender.

Equipment

A rotary beater, an electric mixer, or a wire whip can be used. You should have equally good results with each if you have skill in handling the equipment; with an electric mixer you can easily maintain high speed. A wire whip will take longer.

Mixing and baking

Beat at high speed—this is important for good volume.

Begin adding the sugar after the whites have formed soft peaks. The soft-peak stage occurs just after the egg white foam loses its coarse and open texture and begins to develop a fine, uniform texture. The whites will still slip around or flow in the bowl. If you add the sugar before this, it will take longer to beat the meringue; if you add the sugar after the whites are stiff, you may overbeat the whites, and consequently lose volume, before you have beaten in all the sugar.

Spread the meringue on a filling which has cooled just slightly. In this way, the heat of the filling helps cook the underside of the meringue and helps keep liquid from leaking between the meringue and the filling. In practice, make the filling, pour it into the pie shell, and let it cool while you make the meringue. By this time it will have cooled enough.

Speed will give you best results in meringues. Work quickly as you make the meringues. Have the oven preheated so you can bake the meringue immediately.

Bake in a 425°F. oven for 4½ to 5 minutes—This high-temperature, short-time baking helps make the meringue tender and easy to cut.

MERINGUE

Yield: meringue for one 8- or 9-inch pie

Temperature: 425°F.

Time: 4½ to 5 minutes

3 egg whites (at room temperature)

Dash of salt

¼ teaspoon cream of tartar (optional)

6 tablespoons sugar

1. Place the egg whites in a deep bowl, or the bowl of your electric mixer.
2. Beat with a rotary beater as rapidly as possible, or beat on high speed of the electric mixer, until foamy.
3. Add the cream of tartar, if used, and salt, and continue beating. *If you are beating by hand*, add the sugar 1 tablespoon at a time and beat for a few seconds after each addition. *If you use a mixer*, pour the sugar slowly over the whites while continuing to beat at high speed; it should take about 15 seconds to add all the sugar.
4. Continue beating the meringue at high speed until it forms stiff peaks which do not lop over when the beater is raised. (If you use a hand beater, it is better to stop and rest than to slow down.) Scrape the meringue from the sides of the bowl from time to time. Beat until the sugar is dissolved. You can test for this by tasting the meringue, or by rubbing some between your fingers to see if it is still grainy.
5. Spoon the meringue in small dots over the very warm pie filling, attaching it first to the crust. Decorate the top with a series of swirls. Do not make the swirls too high, or they will burn before the remainder of the meringue is browned.
6. Bake in a hot oven, 425°F., for 4½ to 5 minutes, or until lightly browned. When done, the peaks are a golden brown while the depressions are still white.
7. Cool slowly away from drafts.

To cut meringue pies

- To make a clean cut and to keep meringue from sticking to the knife, dip your knife in hot water.

CUSTARD-TYPE PIES

Custard-type fillings are those which are thickened mostly with eggs. The filling is poured into an unbaked crust, and the filling and crust are usually baked at the same time.

To help prevent soaking of the under crust

- Choose a pie pan which will permit good browning (see page 3).
- Be sure the crust has no cracks or holes so the filling won't seep underneath.
- Refrigerate the pastry shell while preparing the custard mixture.
- Minimize the baking time by having the filling hot when it is poured into the crust. In general, you will get better results by baking pies on the bottom rack of the oven. Experience with your oven may indicate that you will have equally good results on other shelf positions.
- Test the pie for doneness by inserting a knife in the custard *halfway between the center and the outside*. The center may not seem set, but it will set as the pie cools. *Do not overbake.*

To cool custard-type pies

- Place on a rack at room temperature, allowing from 2 to 3 hours for cooling.

CUSTARD PIE

Yield: one 9-inch pie

Pan: 9-inch pie pan

Temperature: 400°F.

Time: 25 to 30 minutes

2½ cups milk

4 eggs

½ cup sugar

¼ teaspoon salt

1 teaspoon vanilla

½ teaspoon almond extract

Nutmeg

1 9-inch unbaked pie shell with high fluted edge

1. Scald the milk.
2. While the milk is heating, beat the eggs slightly. Add the sugar, salt, vanilla, and almond extract.
3. Slowly add the hot milk, stirring constantly.
4. Pour the filling into the unbaked pie shell. Sprinkle with nutmeg.
5. Bake in a moderately hot oven, 400°F., for 25 to 30 minutes, or until a knife inserted halfway between center and outside comes out clean. Cool on a rack at room temperature.
6. Cut the pie after it has cooled.

Preparing a two-crust pie



TWO-CRUST PIE

Temperature and time: See recipes for individual pies

1. Make the pastry for a two-crust pie, page 5. Divide the dough about in half. Press the halves into flattened balls. Build up the outside edge. Chill.
2. Roll one half according to the directions for a one-crust pie, steps 3 and 4, page 8. Trim the edge even with the outside edge of the pie pan.
3. Before adding the filling, roll the top crust to about $\frac{1}{2}$ -inch larger than the pie pan. Fold the crust in half or in quarters and cut a few small *slits* in the center for the escape of steam.
4. Next, add the pie filling and brush the edge of the bottom crust with water.
5. Cover the pie with the top crust. Using shears or a sharp knife, trim the edge allowing $\frac{1}{2}$ -inch overhang. Slip the overhang under the bottom crust. The pocket formed helps to keep the juice from running out.
6. Finish the edge by pressing with either a floured fork, a spoon, or your fingers dipped in flour—or flute the edge (see step 6, page 8). Glaze the top crust if you like, see below.
7. Place the pie on the bottom rack of the oven. Bake as directed.

TWO-CRUST FRUIT PIES

Fresh, frozen, or canned fruits can be used for fruit pies. It is not wise to substitute one for the other in a particular recipe, however, because there will then be a difference in the consistency of the pie.

Glazes for the top crust

- To help crust brown evenly: Brush with a little milk.
- To give a shiny crust: Brush with slightly beaten egg white or egg yolk mixed with water.
- To give a sugary crust: Brush with milk or water and sprinkle with granulated sugar.

13



14



5



16



FROZEN CHERRY PIE

Yield: one 9-inch pie

Pan: 9-inch pie pan

4 cups frozen cherries

$\frac{1}{2}$ cup sugar

6 tablespoons cornstarch

Pinch of salt

Temperature: 425°F.

Time: 30 to 40 minutes

$1\frac{1}{2}$ tablespoons butter

$\frac{1}{8}$ teaspoon almond extract

$\frac{1}{4}$ teaspoon red food coloring

(optional)

Pastry for a two-crust pie

1. Thaw the frozen cherries until 1 cup of juice can be drained from the fruit. This amount of juice is needed for step 2.
2. Place the juice in a saucepan. Mix the sugar, cornstarch, and salt and add to the juice. Cook until the mixture comes to a boil, stirring constantly. Boil for 3 minutes. Remove from heat.
3. Add the butter, almond extract, and red food coloring. When the butter is melted, add the cherries and stir only enough to blend.
4. Fit the pastry into the pan; add the filling; cover with a crust.
5. Place on the lower shelf in a hot oven, 425°F., and bake for 30 to 40 minutes, or until the top crust is a light golden brown. Cool on a rack at room temperature.

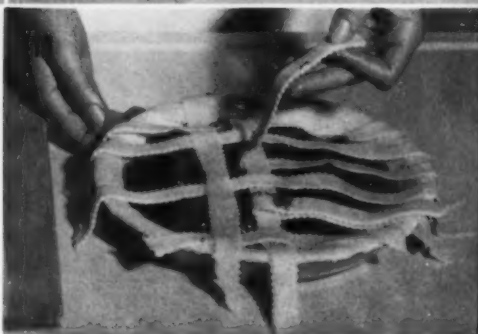
17



18



Making a lattice top



TO MAKE A LATTICE TOP

1. Roll the top crust about $\frac{1}{8}$ -inch thick and about the same size as the pie pan.
2. With a pastry wheel or a paring knife cut the dough into $\frac{1}{2}$ -inch strips. Make 10 to 14 strips.
3. Lay about half the strips in one direction across the filling, spacing them $\frac{1}{2}$ -inch apart.
4. *For an easy lattice top*, simply lay the remaining strips across the first strips, either straight across or diagonally (figure 18). *For a woven lattice top*, weave the cross strips $\frac{1}{2}$ -inch apart, starting with the center (figure 19). Each time you add a cross strip, fold back the alternate perpendicular strips. This may be woven on a piece of waxed paper, chilled, and then flipped on the pie.
5. Cut the strips off at the edge of the pan. Press them down to seal.
6. Flute the edge, or press the crusts together with a floured fork or spoon, and bake as for a two-crust pie.

JULY 1959



Cooperative Extension Service, New York State College of Home Economics at Cornell University and the United States Department of Agriculture cooperating. In furtherance of the Acts of Congress May 8, June 30, 1914. M. C. Bond, Director of Extension, Ithaca, New York.

